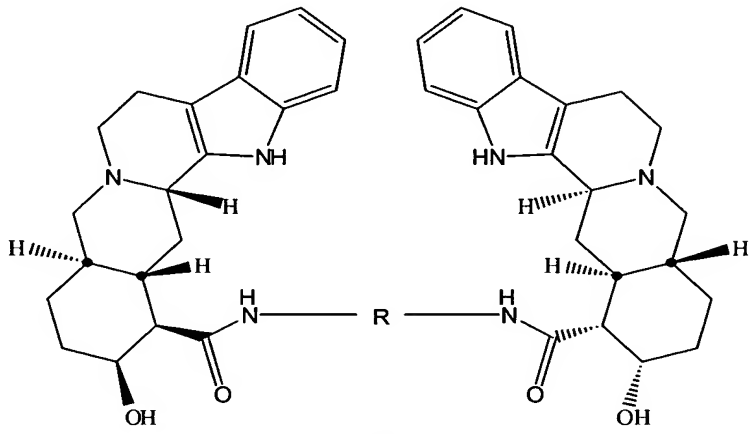
Amendments to the Claims

The listing of claims below is intended to replace all prior listings of claims presented in the above-identified application.

1. (Currently Amended) A method of treating an α_{2a} or α_{2c} adrenergic receptor mediated condition or disorder selected from the group of hypertension, hypotension, erectile dysfunction, pain, glaucoma, alcohol and drug withdrawal, rheumatoid arthritis, ischemia, migraine, cognitive deficiency, spasticity, diarrhea, nasal congestion, and Raynaud's disease, said method comprising:

providing a compound according to formula (I)



(I)

wherein R is a linker molecule that affords activity of the compound as a selective α_{2a} or α_{2c} adrenergic receptor antagonist; and

administering to a patient an effective amount of the compound to treat the α_{2a} or α_{2c} adrenergic receptor mediated condition or disorder.

2. (Previously Presented) The method according to claim 1, wherein the condition or disorder is an α_{2a} adrenergic receptor mediated condition or disorder.

3. (Original) The method according to claim 2, wherein the α_{2a} adrenergic receptor mediated condition or disorder is selected from the group consisting of hypertension, hypotension, erectile dysfunction, pain, glaucoma, alcohol and drug withdrawal, rheumatoid arthritis, ischemia, migraine, cognitive deficiency, spasticity, diarrhea, and nasal congestion.

4. (Previously Presented) The method according to claim 2, wherein the compound exhibits selectivity in binding an α_{2a} adrenergic receptor over an α_{2b} adrenergic receptor.

5. (Previously Presented) The method according to claim 1, wherein the condition or disorder is an α_{2c} adrenergic receptor mediated condition or disorder.

6. (Original) The method according to claim 5, wherein the α_{2c} adrenergic receptor mediated condition or disorder is Raynaud's disease.

7. (Original) The method according to claim 5, wherein the compound exhibits selectivity in binding an α_{2c} adrenergic receptor over an α_{2b} adrenergic receptor.

8. (Original) The method according to claim 1, wherein R has a length of about 2.5 Å to about 45 Å.

9. (Original) The method according to claim 8 wherein R has a length of about 2.5 Å to about 5 Å.

10. (Original) The method according to claim 8 wherein R has a length of about 23 Å to about 29 Å.

11. (Original) The method according to claim 1, wherein R is either:

(i) a straight or branched chain alkyl, alkenyl, alkynyl comprising at least 2 carbon atoms in a main chain thereof, or

(ii) a straight or branched chain alkyl, alkenyl, alkynyl comprising at least 2 carbon atoms in a main chain thereof and an X group within the main chain and/or a Y group as a substituent linked to a carbon atom in the main chain,

with X being —O—, carbonyl, —NR^1— with R^1 being H or an alkyl, —C(O)NHR^1— with R^1 being an alkyl, —S—, sulfoxide, sulfonyl, or a cyclic or multicyclic ring with or without hetero atoms as ring members and including, optionally, one or more substitutions on the ring structure, and

with Y being —OH, —NO_2, —CN, —C(O)H, —SH, a primary, secondary, or tertiary amine, a carboxylic acid, an ester, a keto group, —SO_2NH_2, or —SO_2NHR^2 with R^2 being an alkyl, or

(iii) a cyclic or multicyclic ring with or without hetero atoms as ring members and including, optionally, one or more substitutions on the ring structure(s).

12. (Original) The method according to claim 11, wherein R is a straight chain alkyl.

13. (Original) The method according to claim 12, wherein R is a straight chain C2 to C36 alkyl.

14. (Original) The method according to claim 12, wherein R is a straight chain C3 to C24 alkyl.

15. (Original) The method according to claim 11, wherein R is a straight chain alkyl comprising at least 4 carbon atoms and an X group within the straight chain, wherein X is a —O—.

16. (Original) The method according to claim 15, wherein R is —$(CH_2CH_2\text{-}O\text{-}CH_2CH_2)_n$— wherein n is an integer from 1 to 6.

17. (Original) The method according to claim 15, wherein R is —($CH_2CH_2\text{-}O\text{-}CH_2CH_2\text{-}O\text{-}CH_2CH_2)_n$— wherein n is an integer from 1 to 4.

18. (Original) The method according to claim 11, wherein R is a straight chain alkyl comprising at least 5 carbon atoms and an X group within the straight chain, wherein X is —$C(O)NHR^1$— with R^1 being an alkyl.

19. (Original) The method according to claim 11, wherein R is —$(CH_2\text{-}NHC(O))_n\text{-}CH_2\text{-}CH_2\text{-}CH_2\text{-}CH_2\text{ -}(C(O)NH\text{-}CH_2)_n$ — wherein each n is independently an integer from 1 to 3.

20. (Original) The method according to claim 11, wherein R is a straight chain alkenyl comprising at least 5 carbon atoms in a main chain thereof and an X group within the main chain, wherein X is —$C(O)NHR^1$— with R^1 being an alkyl.

21. (Original) The method according to claim 20, wherein R is a cis isomer or a trans isomer of

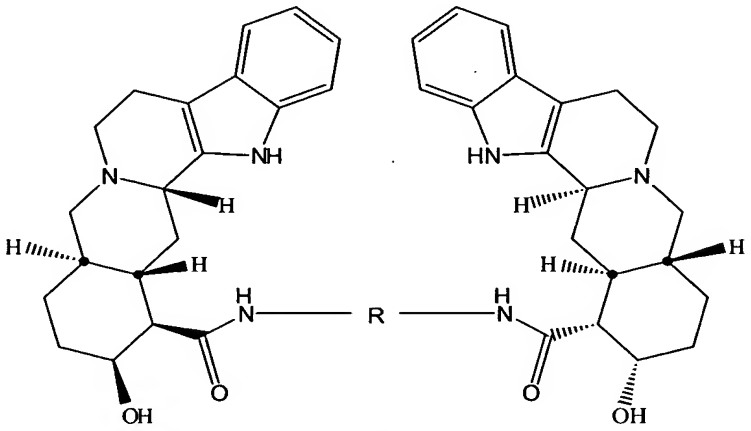
—$(CH_2\text{-}NHC(O))_n\text{-}CH_2\text{-}CH{=}CH\text{-}CH_2\text{-}(C(O)NH\text{-}CH_2)_n$ — wherein each n is independently an integer from 1 to 3.

22. (Original) The method according to claim 21, wherein R is a cis isomer.

23. (Original) The method according to claim 21, wherein R is a trans isomer.

24. (Previously Presented) A method of inhibiting the activity of an α_{2a} adrenergic receptor comprising:

providing a compound according to formula (I)



(I)

wherein R is a linker molecule that affords activity of the compound as an α_{2a} adrenergic receptor antagonist; and

contacting an α_{2a} adrenergic receptor with the compound under conditions effective to inhibit the activity of the α_{2a} adrenergic receptor.

25. (Original) The method according to claim 24, wherein the compound exhibits selectivity in binding an α_{2a} adrenergic receptor over an α_{2b} adrenergic receptor.

26. (Original) The method according to claim 24, wherein R has a length of about 2.5 Å to about 45 Å.

27. (Original) The method according to claim 24, wherein R is either:

(i) a straight or branched chain alkyl, alkenyl, alkynyl comprising at least 2 carbon atoms in a main chain thereof, or

(ii) a straight or branched chain alkyl, alkenyl, alkynyl comprising at least 2 carbon atoms in a main chain thereof and an X group within the main chain and/or a Y group as a substituent linked to a carbon atom in the main chain,

with X being —O—, carbonyl, —NR^1— with R^1 being H or an alkyl, —$C(O)NHR^1$— with R^1 being an alkyl, —S—, sulfoxide, sulfonyl, or a cyclic or multicyclic ring with or without hetero atoms as ring members and including, optionally, one or more substitutions on the ring structure, and

with Y being —OH, —NO_2, —CN, —C(O)H, —SH, a primary, secondary, or tertiary amine, a carboxylic acid, an ester, a keto group, —SO_2NH_2, or —SO_2NHR^2 with R^2 being an alkyl, or

(iii) a cyclic or multicyclic ring with or without hetero atoms as ring members and including, optionally, one or more substitutions on the ring structure(s).

28. (Original) The method according to claim 27, wherein R is a straight chain alkyl.

29. (Original) The method according to claim 27, wherein R is a straight chain alkyl comprising at least 4 carbon atoms and an X group within the straight chain, wherein X is a —O—.

30. (Original) The method according to claim 27, wherein R is a straight chain alkyl comprising at least 5 carbon atoms and an X group within the straight chain, wherein X is —$C(O)NHR^1$— with R^1 being an alkyl.

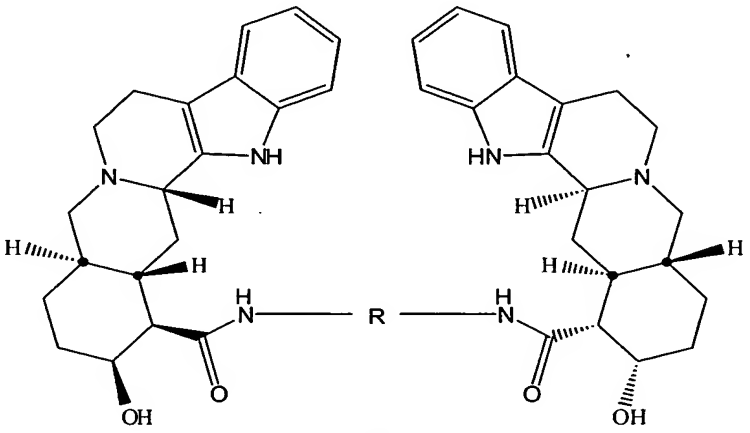
31. (Original) The method according to claim 27, wherein R is —$(CH_2\text{-}NHC(O))_n\text{-}CH_2\text{-}CH_2\text{-}CH_2\text{-}CH_2\text{ -}(C(O)NH\text{-}CH_2)_n$ — wherein each n is independently an integer from 1 to 3.

32. (Original) The method according to claim 27, wherein R is a straight chain alkenyl comprising at least 5 carbon atoms in a main chain thereof and an X group within the main chain, wherein X is —$C(O)NHR^1$— with R^1 being an alkyl.

33. (Original) The method according to claim 32, wherein R is a cis isomer or a trans isomer of —$(CH_2\text{-}NHC(O))_n\text{-}CH_2\text{-}CH{=}CH\text{-}CH_2\text{-}(C(O)NH\text{-}CH_2)_n$ — wherein each n is independently an integer from 1 to 3.

34. (Previously Presented) A method of inhibiting the activity of an α_{2c} adrenergic receptor comprising:

providing a compound according to formula (I)



(I)

wherein R is a linker molecule that affords activity of the compound as an α_{2c} adrenergic receptor antagonist; and

contacting an α_{2c} adrenergic receptor with the compound under conditions effective to inhibit the activity of the α_{2c} adrenergic receptor.

35. (Previously Presented) The method according to claim 34, wherein the yohimbine dimer exhibits selectivity in binding an α_{2c} adrenergic receptor over an α_{2b} adrenergic receptor.

36. (Original) The method according to claim 34, wherein the compound exhibits selectivity in binding an α_{2c} adrenergic receptor over an α_{2a} adrenergic receptor.

37. (Original) The method according to claim 34, wherein R has a length of about 2.5 Å to about 45 Å.

38. (Original) The method according to claim 34, wherein R is either:

(i) a straight or branched chain alkyl, alkenyl, alkynyl comprising at least 2 carbon atoms in a main chain thereof, or

(ii) a straight or branched chain alkyl, alkenyl, alkynyl comprising at least 2 carbon atoms in a main chain thereof and an X group within the main chain and/or a Y group as a substituent linked to a carbon atom in the main chain,

with X being —O—, carbonyl, —NR^1— with R^1 being H or an alkyl, —$C(O)NHR^1$— with R^1 being an alkyl, —S—, sulfoxide, sulfonyl, or a cyclic or multicyclic ring with or without hetero atoms as ring members and including, optionally, one or more substitutions on the ring structure, and

with Y being —OH, —NO_2, —CN, —C(O)H, —SH, a primary, secondary, or tertiary amine, a carboxylic acid, an ester, a keto group, —SO_2NH_2, or —SO_2NHR^2 with R^2 being an alkyl, or

(iii) a cyclic or multicyclic ring with or without hetero atoms as ring members and including, optionally, one or more substitutions on the ring structure(s).

39. (Original) The method according to claim 38, wherein R is a straight chain alkyl.

40. (Original) The method according to claim 38, wherein R is a straight chain alkyl comprising at least 4 carbon atoms and an X group within the straight chain, wherein X is a —O—.

41. (Original) The method according to claim 38, wherein R is a straight chain alkyl comprising at least 5 carbon atoms and an X group within the straight chain, wherein X is —$C(O)NHR^1$— with R^1 being an alkyl.

42. (Original) The method according to claim 38, wherein R is —$(CH_2\text{-}NHC(O))_n\text{-}CH_2\text{-}CH_2\text{-}CH_2\text{-}CH_2\text{-}(C(O)NH\text{-}CH_2)_n$ — wherein each n is independently an integer from 1 to 3.

43. (Original) The method according to claim 38, wherein R is a straight chain alkenyl comprising at least 5 carbon atoms in a main chain thereof and an X group within the main chain, wherein X is —$C(O)NHR^1$— with R^1 being an alkyl.

44. (Original) The method according to claim 43, wherein R is a cis isomer or a trans isomer of —$(CH_2\text{-}NHC(O))_n\text{-}CH_2\text{-}CH{=}CH\text{-}CH_2\text{-}(C(O)NH\text{-}CH_2)_n$ — wherein each n is independently an integer from 1 to 3.